# Computational Modeling Results Time Series

### *Predictions of System Behavior*

The following maps (Figure 1) and cross-sections (Figure 2) show the computational modeling results and development of the $CO_2$ plume at four –time-steps. For all layers in the model and at all time-steps, the plume stays within the AoR. Within the first 15 years of injection, the AoR extent is largely defined. Thereafter, the $CO_2$ injectate concentration in the plume increases with continued injection. Post-injection the plume does not decrease in size. The majority of the $CO_2$ injectate remains as super-critical $CO_2$.

**Figure 1: Plan view showing the plume development through time.**

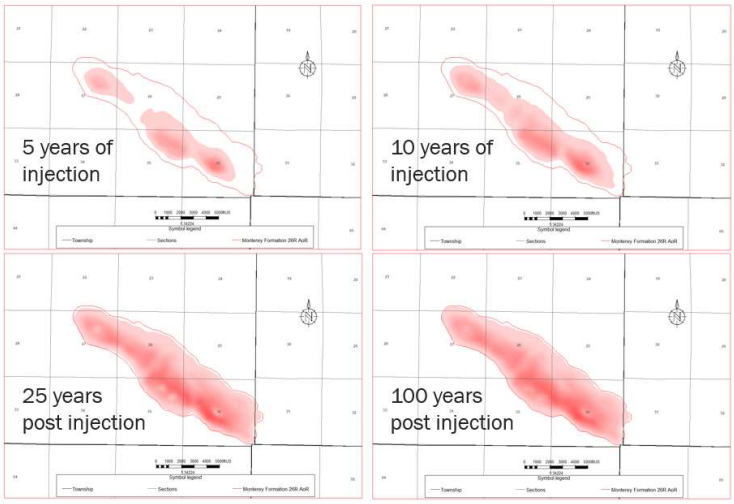
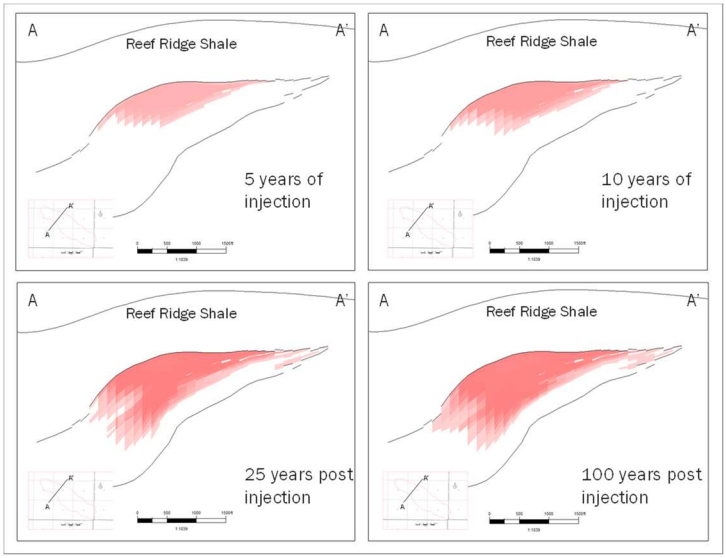



**Figure 2: Cross-sections showing the plume development through varying times through the project. Note that the plume does not change from 50 years post injection to 100 years post injection.**



$CO_2$ injected into the Monterey Formation 26R reservoir will be soluble in both water and oil. Due to remaining saturation of oil and water in the depleted reservoir, total dissolved $CO_2$ in oil and water is 20% and 8% of the $CO_2$ injected respectively (Figure 3). The remaining will be stored as super-critical $CO_2$. Figure 11 shows the cumulative storage for each of the mechanisms.

**Figure 1 CO2 storage mechanisms in the reservoir.**